NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

NOAA In Your State

Oklahoma

"NOAA's science based work touches 300 million Americans daily, protecting lives and livelihoods. NOAA's products and services are the result of the hard work of our dedicated staff and partner organizations located in program and research offices throughout the globe. The following is a summary of NOAA programs based in, and focused on, your state or territory. The entries are listed by statewide, region, and then by congressional districts and cities or towns."

Dr. Kathryn Sullivan
Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator

OK

Statewide

National Ocean Service (NOS) - Regional Geodetic Advisor

The Geodetic Advisor is a jointly funded National Ocean Service (NOS) employee that resides in the state to provide liaison between NOS and the host state. The Geodetic Advisor guides and assists the state's charting, geodetic and surveying programs through technical expertise. The program is designed to fill a need for more accurate geodetic surveys, and is in response to the desire of states to improve their surveying techniques to meet Federal Geodetic Control subcommittee standards and specifications. The surveys provide the basis for all forms of mapping and engineering projects and monitoring of the dynamic Earth. This program also provides technical assistance in planning and implementing Geographic/Land Information System (GIS/LIS) projects.

National Weather Service (NWS) - Automated Surface Observing Systems Stations

The Automated Surface Observing Systems (ASOS) program is a joint effort of NWS, the Federal Aviation Administration, and the Department of Defense. The ASOS serves as the nation's primary surface weather observing network. ASOS is designed to support weather forecast activities and aviation operations and, at the same time, support the needs of the meteorological, hydrological, and climatological research communities. ASOS works non-stop, updating observations every minute, every day of the year observing basic weather elements, such as cloud cover, precipitation, wind, sea level pressure, and conditions, such as rain, snow, freezing rain, thunderstorm, and fog. There are 16 ASOS stations in Oklahoma.

National Weather Service (NWS) - Cooperative Observer Program Sites
The National Weather Service (NWS) Cooperative Observer Program (COOP) is truly the Nation's weather and climate observing network of, by and for the people. More than 10,000 volunteers take observations on farms, in urban and suburban areas, National Parks, seashores, and mountaintops. The COOP was formally created in 1890 under the NWS Organic Act to provide observational meteorological data, usually consisting of daily maximum and minimum temperatures, snowfall, and 24-hour precipitation totals, required to define the climate of the United States and to help measure long-term climate changes, and to provide observational meteorological data in near real-time to support forecast, warning and other public service programs of the NWS. There are 243 COOP sites in Oklahoma.

National Weather Service (NWS) - NOAA Weather Radio All Hazards Transmitters
NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week. Working with the Federal Communication Commission's (FCC) Emergency Alert System, NWR is an "All Hazards" radio network, making it the single source for comprehensive weather and emergency information. In conjunction with Federal, state, and local emergency managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards – including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 Telephone outages). Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the NWS. NWR includes 1100 transmitters covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. There are 20 NWR transmitters in Oklahoma.

OK-1
Tulsa
National Weather Service (NWS) - River Forecast Center
Co-located with the NWS Weather Forecast Office in Tulsa, the Arkansas-Red River Forecast Center (RFC) performs continuous river basin modeling and provides hydrologic forecast and guidance products for rivers and streams in a 208,000 square mile area that covers the entire state of Oklahoma and parts of Texas, New Mexico, Colorado, Nebraska, Missouri, and Arkansas. These products include forecasts of river stage and flow, probabilistic river forecasts, reservoir inflow forecasts, gridded precipitation estimates and forecasts, spring flood outlooks, and flash flood and headwater guidance. Some of the RFCs in the western and central U.S. also provide water supply forecasts. RFCs work closely with local, state and federal water management agencies, including the U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, and U.S. Geological Survey, to provide water and flood information for critical decisions (aka Impact-based Decision-Support Services or IDSS).

National Weather Service (NWS) - Weather Forecast Office
Co-located with the NWS River Forecast Center in Tulsa, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of northeastern Oklahoma and the most northwestern counties of Arkansas. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards.

Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts such as those following the Joplin

and Moore tornadoes, Hurricanes Katrina and Sandy, and the Sept. 11, 2001, terrorist attacks in New York City and Washington D.C. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs, which helps build strong working relationships with local partners in emergency management, government, the media and academic communities. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

OK-3

El Reno, Yukon, Altus, Granite, Oluslee, Mangum, Duke, Mountain Park

Office of Oceanic and Atmospheric Research (OAR) - Lightning Mapping Array

The Oklahoma Lightning Mapping Array (OKLMA) provides three-dimensional mapping of lightning channel segments over west central Oklahoma and two-dimensional mapping of all lightning over most of Oklahoma.

Goodwell

National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR) - U.S. Climate Reference Network

The U.S. Climate Reference Network (USCRN) is an operationally viable research network of 134 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS).

Lamont

Office of Oceanic and Atmospheric Research (OAR) - Cooperative Global Air Sampling Network

NOAA's Earth System Research Laboratory (ESRL) operates a Cooperative Global Air Sampling Network to measure the distribution and trends of carbon dioxide (CO2) and methane (CH4), the two gases most responsible for human-caused climate change, as well as other greenhouse gases and volatile organic compounds. Samples are collected weekly at fixed locations and on several commercial ships. The air samples are delivered to the ESRL laboratory, located in Boulder, CO. The observed geographical patterns and small but persistent spatial gradients are used to better understand the processes, both natural and human induced, that underlie the trends. These measurements help determine the magnitude of carbon sources and sinks in North America.

Office of Oceanic and Atmospheric Research (OAR) - Ozone Measurements

ESRL conducts long-term monitoring of ozone at the surface, with aircraft, and with balloons, through cooperative relationships with local partners. The ESRL tropospheric ozone aircraft measurement program is being done in conjunction with the Carbon Cycle and Greenhouse Gas (CCGG) group's existing aircraft sampling network. Aircraft based in-situ tropospheric ozone measurements provide data relevant to: pollution events, lower atmosphere mixing dynamics, boundary layer stability, ozone trend studies, and the validity of other samples collected in-flight. Near ground level ozone is currently monitored using ultraviolet absorption photometers at eight sites that are generally representative of background conditions. These sites, four of which have records exceeding 25 years in length, provide information on possible long-term changes in tropospheric ozone near the surface and support air quality research.

Office of Oceanic and Atmospheric Research (OAR) - Surface Aerosol Monitoring

NOAA's Earth System Research Laboratory (ESRL) operates surface-based aerosol monitoring sites in seven states and one territory (Puerto Rico). ESRL's aerosol monitoring capabilities include continental sites in response to the finding that human activities primarily influence aerosols on a regional/continental scales rather than on global scales. Aerosols create a significant perturbation of the Earth's radiative balance on regional scales. The Oklahoma site is located in rural Grant County at the Southern Great Plains Cloud and Radiation Testbed site, operated by the Department of Energy's Atmospheric Radiation Measurement Program and located about 90 miles north of Oklahoma City. The measurements made include aerosol optical properties (how the particles absorb and scatter solar radiation), aerosol number concentration and chemical composition of the aerosol particles. The site was established in 1996. The research aims to improve understanding of how trends in the properties of atmospheric aerosols relate to changes in human activity in the region. The Oklahoma site is located in rural Grant County at the Southern Great Plains Cloud and Radiation Testbed site, operated by the Department of Energy's Atmospheric Radiation Measurement Program and located about 90 miles north of Oklahoma City. The site was established in 1996. Surface aerosols are also monitored at other locations including NOAA's baseline observatories. These activities contribute to our knowledge of air quality and climate processes.

Ponca City

Office of Oceanic and Atmospheric Research (OAR) - Carbon Cycle Gases and Halocarbons

NOAA's Earth System Research Laboratory (ESRL) operates a small aircraft-based North American network of sampling sites to measure vertical profiles of important greenhouse gas concentrations. Air is sampled above the surface up to approximately 25,000 feet above sea level using a relatively small, light, and economical automated system developed by ESRL researchers. These air samples are delivered to the ESRL laboratory in Boulder, Colorado for measurements of CO2, CH4, and other greenhouse gasses. This data will improve understanding and models of the global carbon cycle. Sampling is conducted bi-weekly. Some air samples from the small aircraft program are also analyzed for halocarbon gases that can destroy the stratospheric ozone layer. Halocarbon measurements help determine the effectiveness of efforts to protect and restore the ozone layer so it can protect us from the sun's ultraviolet radiation.

Stillwater

National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR) - U.S. Climate Reference Network

The U.S. Climate Reference Network (USCRN) is an operationally viable research network of 134 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS).

OK-4

Norman

National Weather Service (NWS) - Storm Prediction Center

Located within the National Weather Center building on the University of Oklahoma South Research Campus and co-located with NOAA's National Severe Storms Laboratory and the NWS Weather Forecast Office in Norman, the NWS Storm Prediction Center (SPC) issues forecasts and watches for severe thunderstorms and tornadoes over the contiguous United States. The SPC also monitors heavy rain, heavy snow and fire weather events across the U.S. and issues specific national products for those hazards. Part of the NWS National Centers for Environmental Prediction, SPC meteorologists are on duty 24 hours a day, seven days a week. Established in Washington, D.C. in 1952, the SPC moved to Kansas City in 1954 and then Norman in 1997.

National Weather Service (NWS) - Warning Decision Training Branch
The Warning Decision Training Branch (WDTB) in Norman develops and delivers training on the integrated elements of the warning process within a National Weather Service forecast office. Part of the National Weather Service Training Division, the WDTB training activities provide basic and advanced WSR-88D operator proficiency, with an emphasis on the integrated data environment, warning methodology and situation awareness. The WDTB's goal is to increase expertise among NWS personnel in order to better serve the public in warning situations. The WDTB was established in 1989.

National Weather Service (NWS) - Radar Operations Center
The Radar Operations Center (ROC) provides centralized meteorological, computer software, maintenance, and engineering support for all 158 NEXRAD Doppler radar (WSR 88D) systems deployed worldwide. Supported by the Departments of Commerce, Transportation and Defense, the ROC is responsible for modifying and enhancing the WSR-88D systems during their operational life to meet changing requirements, technology advances and improved understanding of the application of these systems to real-time weather operations. The ROC also operates WSR-88D test systems for the development of hardware and software upgrades to enhance maintenance, operation and provide new functionality. The facility houses a help desk (open 24 hours, seven days a week) that assists radar sites with technical support more than 12,000 times each year. The ROC was established in 1987.

National Weather Service (NWS) - Weather Forecast Office
Located within the National Weather Center building on the University of Oklahoma South Research Campus and co-located with NOAA's National Severe Storms Laboratory and the NWS Storm Prediction Center, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of Oklahoma and a portion of north central Texas. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards. Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts such as those following the Joplin and Moore tornadoes, Hurricanes Katrina and Sandy, and the Sept. 11, 2001, terrorist attacks in New York City and Washington D.C. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs, which helps build strong working relationships with local partners in emergency management, government, the media and academic communities. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

Office of Oceanic and Atmospheric Research (OAR) - Cooperative Institute for Mesoscale Meteorology Studies
CIMMS was established in 1978 at The University of Oklahoma (OU). CIMMS provides a mechanism to link the scientific and technical resources of OU and NOAA to create a center of research excellence in mesoscale meteorology, regional climate studies, and related subject areas. CIMMS concentrates its research efforts and resources on six themes: (1) basic convective and mesoscale research; (2) forecast improvements; (3) climatic effects of/controls on mesoscale processes; (4) socioeconomic impacts of mesoscale weather systems and regional-scale climate variations; (5) Doppler weather radar research and development; and (6) climate change monitoring and detection. CIMMS' primary NOAA research partner is the National Severe Storms Laboratory. CIMMS also collaborates with scientists at the National Weather Service Southern Region Headquarters in Fort Worth, Texas, and at the National Climatic Data Center in Asheville, North Carolina.

Office of Oceanic and Atmospheric Research (OAR) - Science On a Sphere®
Science On a Sphere® (SOS) is a room-sized global display system that uses computers and video projectors to display planetary data onto a six-foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain complex environmental processes in a way that is simultaneously intuitive and captivating.

Office of Oceanic and Atmospheric Research (OAR) - N-Wave NOAA Science Network
N-Wave is NOAA's science network connecting NOAA, academic, and state research network communities to data and resources needed to advance environmental science.

Office of Oceanic and Atmospheric Research (OAR) - Collaborative Lower Atmospheric Mobile Profiling System
CLAMPS is a trailer-based boundary layer profiling facility using commercially available sensors. This mobile unit meets a NOAA/NWS operational and research need for profiles of temperature, humidity, and winds near the surface of the earth.

Office of Oceanic and Atmospheric Research (OAR) - Hazardous Weather Testbed
NOAA's Hazardous Weather Testbed (HWT) is a joint facility managed by NSSL, the Storm Prediction Center, and the NWS Oklahoma City/Norman Weather Forecast Office within the National Weather Center building on the University of Oklahoma South Research Campus. The HWT emphasizes developing, testing and evaluating severe weather forecast and warning techniques throughout the U.S. (Facility)

Office of Oceanic and Atmospheric Research (OAR) - National Weather Radar Testbed
The National Weather Radar Testbed (NWRT) is a proof-of-concept phased array radar located in Norman, Oklahoma. NSSL researchers believe this is the next generation of weather radar, and have already shown the NWRT can detect rotation, hail, microbursts and gust fronts well ahead of other radars due to its rapid scan capability. NSSL is working on the concept of a multi-mission phased array radar specifically tailored to meet the Nation's weather, aviation and homeland security needs. (Facility/Instrument)

Office of Oceanic and Atmospheric Research (OAR) - National Severe Storms Laboratory
The NOAA National Severe Storms Laboratory (NSSL) serves the nation by working to improve the lead-time and accuracy of severe weather warnings and forecasts in order to save lives and reduce property damage. NSSL scientists are committed to their mission to understand the causes of severe weather and explore new ways to use weather information to assist National Weather Service forecasters and Federal, university and private sector partners.

Office of Oceanic and Atmospheric Research (OAR) - NOAA-Xband dual-POLarized mobile radar
NOXP is a dual-polarized mobile Doppler radar that can be placed in position as a storm is developing to rapidly scan the atmosphere at low levels, below the beam of NEXRAD radars

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